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EXAMINER
WHITE,E

ART UNIT	PAPER NUMBER
1803	

DATE MAILED: 04/07/92

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This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☒ Responsive to communication filed on 1/13/1992 (Amendment A) ☒ This action is made final.

A shortened statutory period for response to this action is set to expire three month(s), ~~days~~ from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892.
2. ☐ Notice re Patent Drawing, PTO-948.
3. ☒ Notice of Art Cited by Applicant, PTO-1449.
4. ☐ Notice of Informal Patent Application, Form PTO-152.
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.
6. ☐ _____

Part II SUMMARY OF ACTION

1. ☒ Claims 1 - 58 are pending in the application.
   Of the above, claims _____ are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 1 - 58 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed on _____, has been ☐ approved. ☐ disapproved (see explanation).
12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

SN-07/580,706

EXAMINER'S ACTION

PTOL-326 (Rev. 9-89)

Claims 1-58 are pending in the instant application.

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
>
> Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103.

Claims 1-58 are rejected under 35 U.S.C. § 103 as being unpatentable over Volpenhein (US Patent No. 4,517,360) in view of Osipow et al (US Patent No. 3,644,333).

Volpenhein disclose a transesterification process for synthesizing polyol fatty acid polyesters comprising the steps (1) heating a mixture of (a) a polyol selected from the group consisting of monosaccharides, disaccharides and sugar alcohols,

(b) a fatty acid ester selected from the group consisting of methyl esters, 2-methoxy ethyl esters, benzyl esters and mixtures thereof, (c) an alkali metal fatty acid soap, and (d) a basic catalyst, to a temperature of from about 110° C to about 180 C at a pressure of from about 0.1 mm to about 760 mm of mercury to form a homogenous melt; and (2) subsequently adding to the reaction product of step (1) excess fatty acid ester selected from the group consisting of methyl esters, 2-methoxy ethyl esters, benzyl esters and mixtures thereof (see column 2, lines 40-60). Volpenhein further disclose that the heterogeneous mixture in carrying out step 1 generally comprises from about 10% to about 50%, preferably from about 15% to about 30%, by weight of the polyol; from about 40% to about 80%, preferably from about 55% to about 75%, by weight of the fatty acid esters; from about 1% to about 30%, preferably from about 5% to about 20%, by weight of the alkali metal fatty acid soap; and from about 0.05% to about 5%, preferably from about 0.1% to about 0.5%, by weight of the basic catalyst component (see column 5, lines 3-12). The process disclosed by Volpenhein appears to be closely analogous to the process set forth in the instant claims. Osipow et al, who also disclose a process for synthesizing sucrose esters, further disclose that the reaction between sucrose and the ester of a 12 to 22 carbon atom fatty acid occurs between the ester and solid sucrose having a very fine particle size, that is, in the magnitude of less than one micron in diameter, in the presence of

an alkaline catalyst (see column 4, lines 5-9) which appears to be within the scope of the instant claimed process. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the process disclose by Volpenhein by using solid sucrose of very fine particle size as taught by Osipow et al, since the use of sucrose of very fine particle size as shown by Osipow et al is well known in the art.

Applicant's arguments filed January 13, 1992 have been fully considered but they are not deemed to be persuasive. The Applicants argue that "Osipow et al achieve particle size production of polyol by dissolving sucrose in water, rather than by mechanical size reduction as in the instant claims." Applicants further state that "since Osipow et al need water to form the microemulsion required by its process, this reference would actually teach away from mechanical size reduction according to the instant claims." Although Osipow et al uses a different process to reduce the particle size of the polyol, the particle size of the polyol (1 micron) used by Osipow et al is well within the particle size claimed by the Applicants. The use of water by Osipow et al does not appear to be a disadvantage since the Osipow et al reference disclose at lines 12-17 of column 4, that essentially all the water is distilled off before adding the alkaline catalyst. The Japanese Laid-Open Patent Application 51/14486 which was mentioned by the Applicants shows that preparation of powder sugar using a conventional grinder,

i.e., by mechanical size reduction, is well known in the art. Hence, this improvement claimed by the Applicants do not appear to be of patentable moment.

Another improvement argued by the Applicants is an initial stage reaction temperature between about 130° C and 140° C, and a final stage reaction temperature of from 80° C to about 120° C. Applicant argue that Volpenhein does not disclose or suggest the combination of initial stage reaction temperatures with lower final stage reaction temperatures according to the instant claims. However, Volpenhein teaches heating the reaction mixture in the initial stages to temperatures ranging from about 110° C to about 180° C (see column 5, lines 33-35), and teaches heating this reaction mixture in the final stages to temperatures of from about 120° C to about 160° C (see column 5, lines 53-57). The temperature range of Volpenhein initial stage covers the initial stage temperature range claimed by the Applicants and final stage temperature of 120° C disclosed in the Volpenhein reference is within the final stage temperature ranged claimed by the Applicants which is a maximum of 120° C.

Applicants further argue that Volpenhein does not teach the combination of increasing the mass transfer area of the reaction mixture with higher pressures during the final stages of the reaction. Applicants also state that "although Volpenhein teaches inert gas sparging to assist in the removal of generated alcohol, it is in the context of using a vacuum, i.e., lower

pressures." However, this argument is not persuasive since the later stage of Volpenhein's process is carried out at a pressure of 10 mm Hg which appears to be within the scope of the later stage pressure claimed by the Applicants. The European Patent Application No. 349,059 which was mentioned by the Applicants and which discloses a process to remove lower alkyl alcohol from the fatty acid lower alkylester as a result of a transesterification reaction shows that it is well known in the art to carried out this step at a pressure of below 50 mbar which covers part of the pressure range claimed by the Applicants. Hence, the instant claimed improvements regarding the initial stage & final stage temperature and final stage pressure as disclosed in claim 1 do not appear to be of patentable moment having the Volpenhein reference before him.

All the claims (1-58) are rejected.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to E. White whose telephone number is (703) 308-4004.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

EW

White:ew
April 5, 1992

Johnnie R. Brown

JOHNNIE R. BROWN
SUPERVISORY PATENT EXAMINER
ART UNIT 183